

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Previously Presented) A semiconductor device comprising:

a thin film transistor comprising a semiconductor film formed over a substrate having an insulating surface, said semiconductor film comprising at least a source region, a drain region, and a channel region between said source and drain regions, wherein said source and drain regions are formed throughout thickness of said semiconductor film;

a first insulating film comprising an oxide film of said semiconductor film thereon;

a second insulating film comprising a deposition film over said semiconductor film; and

a gate electrode formed adjacent to said channel region of said semiconductor film,

wherein said first insulating film contains at least one halogen element selected from fluorine and chlorine, and

wherein said semiconductor film contains hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$, and oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

3. (Previously Presented) A semiconductor device according to claim 2, wherein said semiconductor film further contains a halogen element at a concentration of $1 \times 10^{15} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$.

4. (Previously Presented) A semiconductor device according to claim 2, wherein said semiconductor film further contains a metal element which promotes crystallization of silicon at a concentration of $5 \times 10^{19} \text{ cm}^{-3}$ or less.

5. (Previously Presented) A semiconductor device according to claim 2, wherein said first insulating film includes at least one halogen element selected from fluorine and chlorine.

6. (Previously Presented) A semiconductor device according to claim 2, wherein said channel region contains carbon and nitrogen at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less, respectively.

7. (Previously Presented) A semiconductor device comprising:

a thin film transistor comprising a crystalline semiconductor film formed on a substrate having an insulating surface, said crystalline semiconductor film having at least a source region, a drain region, and a channel region between said source and drain regions, wherein said source and drain regions are formed throughout thickness of said crystalline semiconductor film;

at least one gate insulating film adjacent to said crystalline semiconductor film, said one gate insulating film comprising an oxide of said crystalline semiconductor film;

a gate electrode adjacent to said channel region of said crystalline semiconductor film with said gate insulating film interposed therebetween;

an inorganic interlayer insulating film over said crystalline semiconductor film and said gate electrode; and

an organic film over said inorganic interlayer insulating film,

wherein said channel region contains carbon and nitrogen at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less, respectively, and

wherein said crystalline semiconductor film contains a halogen element at a concentration of $1 \times 10^{15} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$, and oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

8. (Previously Presented) A semiconductor device according to claim 7, wherein said semiconductor film further contains hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$.

9. (Previously Presented) A semiconductor device according to claim 7, wherein said semiconductor film further contains a metal element which promotes crystallization of silicon at a concentration of $5 \times 10^{19} \text{ cm}^{-3}$ or less.

10. (Previously Presented) A semiconductor device according to claim 7, wherein said inorganic interlayer insulating film comprises one or a plurality of films selected from a silicon oxide film, a silicon nitride film, and a lamination film thereof.

11. (Previously Presented) A semiconductor device according to claim 7, wherein said organic film comprises a resin material.

12. (Previously Presented) A semiconductor device according to claim 7, wherein said gate insulating film includes at least one halogen element selected from fluorine and chlorine.

13. (Previously Presented) A semiconductor device according to claim 7, wherein said halogen element is selected from the group consisting of fluorine, chlorine, and a mixture of fluorine and chlorine.

14. (Canceled)

15. (Previously Presented) A semiconductor device comprising:

a thin film transistor comprising a semiconductor film formed over a substrate having an insulating surface, said semiconductor film comprising at least a source region, a drain region, and a channel region between said source and drain regions, wherein said source and drain regions are formed throughout thickness of said semiconductor film;

a first insulating film comprising an oxide film of said semiconductor film thereon;

a second insulating film comprising a deposition film over said semiconductor film; and

a gate electrode formed adjacent to said channel region of said semiconductor film,

wherein said first insulating film contains at least one halogen element selected from fluorine and chlorine, and

wherein said semiconductor film contains a metal element which promotes crystallization of silicon at a concentration of $5 \times 10^{19} \text{ cm}^{-3}$ or less, and oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

16. (Previously Presented) A semiconductor device according to claim 15, wherein said semiconductor film further contains hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$.

17. (Previously Presented) A semiconductor device according to claim 15, wherein said semiconductor film further contains a halogen element at a concentration of $1 \times 10^{15} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$.

18. (Previously Presented) A semiconductor device according to claim 15, wherein said first insulating film includes at least one halogen element selected from fluorine and chlorine.

19. (Previously Presented) A semiconductor device according to claim 15, wherein said metal element is one or a plurality of elements selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and [[Au]] Au.

20. (Previously Presented) A semiconductor device according to claim 15, wherein said channel region contains carbon and nitrogen at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less, respectively.

21. (Previously Presented) A semiconductor device comprising:

a thin film transistor comprising a crystalline semiconductor film formed on a substrate having an insulating surface, said crystalline semiconductor film having at least a source region, a drain region, and a channel region between said source and drain regions, wherein said source and drain regions are formed throughout thickness of said crystalline semiconductor film;

at least one gate insulating film adjacent to said crystalline semiconductor film, said one gate insulating film comprising an oxide of said crystalline semiconductor film;

a gate electrode adjacent to said channel region of said crystalline semiconductor film with said gate insulating film interposed therebetween;

an inorganic interlayer insulating film over said crystalline semiconductor film and said gate electrode; and

an organic film over said inorganic interlayer insulating film,

wherein said channel region contains carbon and nitrogen at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less, respectively, and

wherein said crystalline semiconductor film contains a halogen element at a concentration of $1 \times 10^{15} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$, and hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$.

22. (Previously Presented) A semiconductor device according to claim 21, wherein said semiconductor film further contains oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

23. (Previously Presented) A semiconductor device according to claim 21, wherein said semiconductor film further contains a metal element which promotes crystallization of silicon at a concentration of $5 \times 10^{19} \text{ cm}^{-3}$ or less.

24. (Previously Presented) A semiconductor device according to claim 21, wherein said inorganic interlayer insulating film comprises one or a plurality of films selected from a silicon oxide film, a silicon nitride film, and a lamination film thereof.

25. (Previously Presented) A semiconductor device according to claim 21, wherein said organic film comprises a resin material.

26. (Previously Presented) A semiconductor device according to claim 21, wherein said gate insulating film includes at least one halogen element selected from fluorine and chlorine.

27. (Previously Presented) A semiconductor device according to claim 21, wherein said halogen element is selected from the group consisting of fluorine, chlorine, and a mixture of fluorine and chlorine.

28. (Canceled)

29. (Previously Presented) A semiconductor device comprising:

a thin film transistor comprising a semiconductor film formed over a substrate having an insulating surface, said semiconductor film comprising at least a source region, a drain region, and a channel region between said source and drain regions, wherein said source and drain regions are formed throughout thickness of said semiconductor film;

a first insulating film comprising an oxide film of said semiconductor film thereon;

a second insulating film comprising a deposition film over said semiconductor film; and

a gate electrode formed adjacent to said channel region of said semiconductor film,

wherein said first insulating film contains at least one halogen element selected from fluorine and chlorine, and

wherein said semiconductor film contains a metal element which promotes crystallization of silicon at a concentration of $5 \times 10^{19} \text{ cm}^{-3}$ or less, and hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$.

30. (Previously Presented) A semiconductor device according to claim 29, wherein said semiconductor film further contains oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

31. (Previously Presented) A semiconductor device according to claim 29, wherein said semiconductor film further contains a halogen element at a concentration of $1 \times 10^{15} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$.

32. (Previously Presented) A semiconductor device according to claim 29, wherein said first insulating film includes at least one halogen element selected from fluorine and chlorine.

33. (Previously Presented) A semiconductor device according to claim 29, wherein said metal element is one or a plurality of elements selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and [[Au]] Au.

34. (Previously Presented) A semiconductor device according to claim 29, wherein said channel region contains carbon and nitrogen at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less, respectively.

35. (Previously Presented) A semiconductor device comprising:

a thin film transistor comprising a crystalline semiconductor film formed on a substrate having an insulating surface, said crystalline semiconductor film having at least a source region, a drain region, and a channel region between said source and drain regions, wherein said source and drain regions are formed throughout thickness of said crystalline semiconductor film;

at least one gate insulating film adjacent to said crystalline semiconductor film, said one gate insulating film comprising an oxide of said crystalline semiconductor film;

a gate electrode adjacent to said channel region of said crystalline semiconductor film with said gate insulating film interposed therebetween;

an inorganic interlayer insulating film over said crystalline semiconductor film and said gate electrode; and

an organic film over said inorganic interlayer insulating film,

wherein said channel region contains carbon and nitrogen at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less, respectively, and

wherein said crystalline semiconductor film contains a metal element which promotes crystallization of silicon at a concentration of $5 \times 10^{19} \text{ cm}^{-3}$ or less, and a halogen element at a concentration of $1 \times 10^{15} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$.

36. (Previously Presented) A semiconductor device according to claim 35, wherein said semiconductor film further contains oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

37. (Previously Presented) A semiconductor device according to claim 35, wherein said semiconductor film further contains hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$.

38. (Previously Presented) A semiconductor device according to claim 35, wherein said inorganic interlayer insulating film comprises one or a plurality of films selected from a silicon oxide film, a silicon nitride film, and a lamination film thereof.

39. (Previously Presented) A semiconductor device according to claim 35, wherein said organic film comprises a resin material.

40. (Previously Presented) A semiconductor device according to claim 35, wherein said gate insulating film includes at least one halogen element selected from fluorine and chlorine.

41. (Previously Presented) A semiconductor device according to claim 35, wherein said halogen element is selected from the group consisting of fluorine, chlorine, and a mixture of fluorine and chlorine.

42. (Currently Amended) A semiconductor device according to claim 35, wherein said metal element is one or a plurality of elements selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and [[Au]] Au.

43. (Canceled)